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Chairman Levin, Ranking Member Brady, and distinguished members of the Ways and Means Subcommittee on Trade, I am pleased to participate in today's hearing.

I understand that today's hearing is focused on how U.S. Climate Change legislation can limit both carbon leakage and job leakage, that is, maintain U.S. competitiveness.

What I hope to add to today's discussion is how these efforts could be undertaken in line with U.S. obligations under the World Trade Organization (WTO). By way of background, I have worked for the WTO, advising dispute panels and the WTO Appellate Body, from 1996 to 2002. After that, I became a tenured, full professor at Duke Law School here in the United States. In 2007, I returned to Switzerland to take up a professorship at the Graduate Institute of International and Development Studies in Geneva. At the same time, I have been advising the Washington office of the law firm of King & Spalding on matters of trade, investment and climate change, helping, among other clients, energy-intensive industries based in the United States to prepare for tomorrow's low-carbon economy. In early 2007, at the request of Duke's Nicholas Institute for Environmental Policy Solutions, I published a paper on *U.S. Federal Climate Policy and Competitiveness Concerns: The Limits and Options of International Trade*

¹ The views expressed in this testimony are my own and not necessarily those of the Graduate Institute, King & Spalding or any of its clients.

Law.² This paper was referred to extensively in, for example, last year's work of the House Committee on Energy and Commerce.³ In 2008, I also edited a special issue of the Carbon & Climate Law Review on the topic of *Climate Change in a Global Economy*.⁴

Summary

My core message to you today is this. First, WTO rules are flexible enough to deal with both carbon and job leakage. People should stop using the WTO as an excuse not to tackle climate change. Second, even though the WTO should not stand in the way, fighting climate change will have costs, and addressing carbon and job leakage in a cost-effective and administratively feasible way will not be easy. The devil will be in the detail. Solutions to address carbon and job leakage must be carefully calibrated, and may vary, based on industry and country-specific data. In this process of finding appropriate remedies, WTO rules do have a useful, positive role to play, that is: To avoid wasteful protectionism or discrimination that serves neither the environment nor American jobs.

In sum, the WTO should not stop your efforts, but merely guide them as one relevant factor amongst many other, arguably more important, criteria such as cost-effectiveness, administrative feasibility and risk of circumvention.

Carbon and Job Leakage Are Real But Should Not Be Exaggerated

Although carbon and job leakage are often exaggerated, it is clear that they are a problem. If today the United States puts a limit on carbon emissions and countries like China or India do nothing, then evidence indicates that the production of some carbon-intensive goods, together with the jobs and emissions associated with them, will shift or

² April 2007, Working Paper 07/02, Nicholas Institute for Environmental Policy Solutions, Duke University, available at <http://www.nicholas.duke.edu/institute/internationaltradelaw.pdf>.

³ Climate Change Legislation Design White Paper, Competitiveness Concerns/Engaging Developing Countries, January 2008, available at http://energycommerce.house.gov/Climate_Change/White_Paper.Competitiveness.013108.pdf.

⁴ 1 Carbon & Climate Law Review 2008 (CCLR), Lexxion, Berlin.

leak from the United States to these other, unregulated countries. This leakage rate varies widely between sectors. For low-carbon products, the impact will be negligible. For some carbon- or energy-intensive industries the impact will be real.

One recent study finds that a price of \$21 per ton of CO₂ applied in Japan and the E.U.-15 (but not in other countries) would lead to a leakage rate of 55 per cent in the iron and steel sector. Another study finds that a price of \$20 per ton of CO₂ in a cap-and-trade system applied in the E.U.-27 offers leakage rates between 0.5 and 25 per cent in the iron and steel sector, and between 40 and 70 per cent in the cement sector. The exact numbers depend, among other things, on how allowances are distributed and the capacity for producers to pass-through higher production costs onto consumers. More pass-through capacity means less leakage: If I can pass-on the cost of carbon to consumers and consumers continue to buy, my company will not suffer. Pass-through capacity and thereby leakage is, in turn, determined by the intensity of foreign competition, market concentration and tightness, and the availability of substitutable products. This means that widely traded, fungible products such as cement, aluminum and steel will suffer more leakage than products locally produced and consumed.⁵

To give but one example in the European context as applied to the cement industry, at a price of 25 euros per ton of CO₂, the cost of direct CO₂ emissions for European cement producers (assuming all allowances were auctioned) would be 20 euros per ton of cement. This represents approximately 40 per cent of the total cost to produce a ton of cement. If this additional 40 per cent cannot be passed-through to consumers, many European cement producers will simply have to close shop.⁶

So, to the extent that carbon and job leakage is, indeed, a problem, what can we do about it?

⁵ Julia Reinaud, Issues behind competitiveness and carbon leakage, Focus on heavy industry, IEA Information Paper, IEA/OECD, Paris, 2008, at 4.

⁶ Julia Reinaud, Industrial Competitiveness under the European Union Emissions Trading Scheme, IEA Information Paper, IEA/OECD, Paris, 2005.

The First-Best Solution Is an International Agreement to Limit Emissions Across Countries

The first-best solution is, no doubt, to conclude international agreements with countries such as China, India and Brazil that mandate those countries to also cut emissions and to price-in the cost of CO₂ into their production processes.

When it comes to such international agreements, we must be realistic and fair. Given historical emissions and the head-room needed for developing countries to build up their economies, emission reductions should not, and will not be, the same for each and every country. The United States has ratified and is a party to the UN Framework Convention on Climate Change (UNFCCC) (albeit not, of course, to the Kyoto Protocol) and in this convention all countries, including the United States, agreed to the principle of “common but differentiated responsibilities and respective capabilities”.⁷ This principle was, moreover, reconfirmed in the July 2008 G8 Hokkaido Toyako summit declaration.

Thus, if, for example, China were to agree to carry its share of the burden and to cut its emissions to a level that is fair and justifiable, Chinese producers would already bear the cost of carbon under Chinese legislation. In that case, and even though the cost would not be the exact same, both U.S. and Chinese steel and cement producers would be on something of a level playing field, carbon and job leakage would be limited and there would be no need to impose “carbon equalizing” tariffs or other requirements on Chinese imports.

Achieving “carbon equivalence” through such an international agreement would have the added benefit of avoiding WTO litigation or any other trade wars. As Pascal Lamy, Director-General of the WTO put it:

I am of the firm conviction that the relationship between international trade – and indeed the WTO – and climate change would be best defined by a consensual

⁷ Article 3.1 of the UNFCCC.

international accord on climate change that successfully embraces all major polluters. In other words, until a truly global consensus emerges on how best to tackle the issue of climate change, WTO Members will continue to hold different views on what the multilateral trading system can and must do on this subject. Only a consensual international accord can take them forward.⁸

We must, however, also be realistic in another way. Notwithstanding the principle of “common but differentiated responsibility”, we cannot exclude as a possibility that in the Copenhagen climate change negotiations at the end of this year, some developing countries will simply refuse to carry their share of the burden. If this were to happen, what can countries like the European Community, the United States or Japan do, assuming that these countries do move forward and limit their carbon emissions?

The World of Second-Bests: “Carbon Equivalence” Through Lower Costs on Energy-Intensive U.S. Industries, or Higher Costs on Energy-Intensive Imports

Within the second-best world where no international agreement can be reached, two main options are available (options that are, moreover, not mutually exclusive):

- First, the United States could soften the impact of climate change legislation on those U.S. industries particularly exposed to carbon and job leakage (think of cement, steel, aluminum, etc.). The most obvious solution to this end is for the government to allocate free allowances to these industries (be it based on past emissions or so-called grandfathering, or by using some benchmark of carbon-intensity).
- Second, the United States could harden its position against imports, especially imports of carbon-intensive products, and impose a carbon cost on those imports to level the economic playing field and thereby avoid carbon leakage.

⁸ Pascal Lamy, Preface, 1 Carbon & Climate Law Review (2008), 1.

The most obvious solution to this end, within a U.S. cap-and-trade scheme, is to oblige importers to buy emission allowances. Another option could be to enact an energy-performance or energy-intensity standard for certain products (say, a ton of steel cannot have a carbon-footprint of more than x tons of CO₂) and to impose that standard on both domestic steel and imported steel. A variation thereof is to set a carbon-intensity benchmark with products producing less than the benchmark obtaining carbon credits and products above the benchmark having to buy credits to make-up for their heavy carbon-footprint. Such “tradable performance standards” (TPS) is what the Coalition for Sustainable Cement Manufacturing & Environment has proposed in the context of state-wide California climate change efforts.⁹

In sum, to achieve “carbon equivalence” across countries and thereby avoid or at least limit carbon and job leakage, three options are available: (i) international agreement, (ii) lower the internal, U.S. cost of carbon, or (iii) impose a carbon cost also on imports (be it through import allowances or a performance standard applied to both domestic and imported products). A combination of these three options seems likely, whereby some countries would be recognized as making “equivalent” efforts as compared to those made by the United States (for example, E.C. imports would not have to buy allowances); some U.S. industries get (more) free allowances (and/or for a longer time); and certain imports from other countries, who refuse to (sufficiently) cut their emissions, have to buy a certain (variable) number of allowances corresponding to their climate change efforts and level of development.

What now would the WTO say about any of this? As noted earlier, the WTO would prefer the first option of international agreement and this option is unlikely to raise WTO questions. Cutting costs for certain U.S. industries, however (Option 2), may lead to a WTO challenge based on the argument that such carve-outs or free allowances for, say, U.S. cement or steel amount to an unfair or trade-distorting subsidy in violation of

⁹ In the interest of full disclosure, King & Spalding LLP advised the Coalition for Sustainable Cement and Manufacturing & Environment in this context.

the WTO subsidies agreement. Imposing a carbon cost, tariff or allowance requirement on imports, on the other hand (Option 3), risks a WTO challenge based on the argument that such added cost on imports discriminates imports as against domestic products (in violation of the national treatment principle) or discriminates against some countries as against others (in violation of the most-favored-nation clause).

Carve-Outs or Free Allowances For Carbon-Intensive U.S. Industries Can Be Modeled in Compliance with WTO Subsidy Rules

The WTO subsidies agreement only prohibits two, very specific types of subsidies: (i) subsidies that are contingent on exporting the final product, and (ii) subsidies that are contingent on using domestic inputs.¹⁰ Production subsidies, or free allowances that are handed out even if products are not exported or even if foreign inputs are used in the production process, are not prohibited under the WTO treaty. Such production subsidies may only be challenged at the WTO if they can be shown to be particularly trade-distorting, that is, cause “adverse effects” to other WTO Members such as “serious prejudice” to, for example, China or Europe, by impeding or displacing Chinese or European steel or cement on the U.S. or third country markets or “significantly undercutting” the market price of steel or cement.¹¹

Would carve-outs or free allowances for energy-intensive U.S. industries constitute such so-called “actionable” or “trade-distorting” subsidies? On this question, four lines of defense are available.

Firstly, it is not even clear that free allowances or lower emission cuts imposed on energy-intensive industries are “subsidies” in the first place. For there to be a subsidy, there must be a “financial contribution” by the U.S. government or income or price support.¹² The argument can be made that although these industries would carry less of a burden than others, the legislation still imposes costs on them (e.g. the opportunity cost of

¹⁰ Article 3 of the Subsidies Agreement.

¹¹ Articles 5 and 6 of the Subsidies Agreement.

¹² Article 1.1(a) of the Subsidies Agreement.

using rather than selling a free allowance¹³) instead of offering them a “financial contribution”. In addition, for there to be a “subsidy” in WTO terms, the industries must be given a “benefit” as compared to what normal market conditions would offer them.¹⁴ Here, the argument can be made that the market point of comparison is not other U.S. industries that are hit harder, but rather similarly situated, carbon-intensive industries that are equally treated or exempted. Thus, even if carbon-intensive U.S. industries could be seen as receiving a “financial contribution” in the form of, for example, free allowances, it arguably does not offer them a “benefit” as compared to normal market situations.

Secondly, for a subsidy to be “actionable” under WTO rules, it must be granted to a “specific” enterprise or industry or group of enterprises or industries.¹⁵ If free allowances or carve-outs are granted not just to one company or industry (say, cement), but to all industries based on the objective criterion of, for example, a high risk of carbon leakage, and this eligibility criterion is “automatic”, “clearly spelled out” and “strictly adhered to”, the argument can be made that the subsidy is not “specific”.¹⁶ And if a subsidy is not “specific”, it is not “actionable”.

Thirdly, and probably most importantly, other WTO Members would have a hard time demonstrating that free allowances or carve-outs cause them “serious prejudice”. On the contrary, as noted earlier, carbon-intensive industries in the United States would carry some extra burden and it would be hard to show how this extra burden harms the bottom line of, for example, Chinese companies. In addition, when it comes to countries that do cut emissions, many of them also hand out free allowances or have special

¹³ Moreover, in many cases free allowances operate within a maximum cap which does not allow for growth, thus giving unregulated imports an advantage. In addition, even with 100 per cent free allowances, cement companies, for example, would still be facing higher indirect costs from climate change legislation like higher power rates and higher raw material costs.

¹⁴ Article 1.1(b) of the Subsidies Agreement.

¹⁵ Article 2 of the Subsidies Agreement.

¹⁶ In support, Article 2.1(b) of the Subsidies Agreement: “Where the granting authority, or the legislation pursuant to which the granting authority operates, establishes objective criteria or conditions governing the eligibility for, and the amount of, a subsidy, specificity shall not exist, provided that the eligibility is automatic and that such criteria and conditions are strictly adhered to. The criteria or conditions must be clearly spelled out in law, regulation, or other official document, so as to be capable of verification”.

provisions for energy-intensive sectors.¹⁷ In this context, to show that similar carve-outs in U.S. climate change legislation cause “serious prejudice” to E.C. exporters may be difficult.¹⁸

Fourthly, and finally, although the WTO subsidies agreement itself, as of 2000, no longer offers a safe-haven to certain “green subsidies”, the standard *General Agreement on Tariffs and Trade* (GATT) does include an environmental exception (GATT Article XX). Hence, even if none of the above arguments were accepted (i.e., there is a “subsidy”, it is “specific”, and it does cause “serious prejudice”), a last line of defense for the United States could be to argue that free allowances or other carve-outs are necessary to protect the environment in line with GATT exceptions.¹⁹ At first blush one could claim that carve-outs or free allowances will harm the environment by allowing heavy polluters to continue to pollute. Yet, if free allowances can be sold in the market and are limited to historical emissions or calculated based on a benchmark of normal or average carbon emissions, the affected industries will have an incentive to cut emissions. As a result, even free allowances can contribute to lower carbon emissions and thereby protect the environment. It could also be argued that without such carve-outs or free allowances, the United States would not have adopted any climate change legislation at all (which would surely be much worse for the environment). In addition, carve-outs and free allowances are instruments to limit carbon leakage. Without such instruments (i.e. with full carbon costs on U.S. cement or steel) overall, world-wide emissions could actually have increased by means of U.S. production shifting overseas and producing cement or steel in, for example, China with higher levels of carbon than those emitted previously in

¹⁷ The current E.U. emissions trading scheme permitted for free allocation of up to 95 per cent of allowances for the 2005-2007 period and 90 per cent for the 2008-2012 period. Switzerland’s scheme, which started in 2008, opted for 100 per cent free allocation.

¹⁸ Looking beyond 2012, the European Commission has proposed to make auctioning of allowances the principal mode of allocation for, for example, the power sector. Other sectors would be divided in two, distinct categories: (i) those identified as not “exposed to the risk of carbon leakage” which would continue to receive some free allowances until 2020, and (ii) “[e]nergy-intensive industries which are determined to be exposed to significant risk of carbon leakage” which could receive a higher amount of free allocation or for which an “effective carbon equalization system” could be imposed “with a view to putting EU and non-EU producers on a comparable footing” (paragraph 13, Draft Proposal for a Directive of the European Parliament and of the Council amending Directive 2003/87/EC, Brussels, January 2008).

¹⁹ Whether GATT exceptions apply also to rules under the Subsidies Agreement remains an open question and has not yet been tested in WTO jurisprudence.

the United States, not only emitted during production in China (both directly in the production process and indirectly, for example, through unregulated electrical generation), but also with the additional negative impact of emissions associated with transporting these goods long distances to the United States.

In sum, if carefully calibrated along the lines suggested above, carve-outs or free allowances for carbon-intensive U.S. industries can be modeled in compliance with WTO subsidy rules. More difficult, and arguably more important, than achieving compliance with WTO rules will be to design a system of free allowances that provides the right incentives to energy-intensive industries (based on solid empirical, sector-specific studies and predictions; not the strength of their lobbying efforts), contributes to stopping climate change and limits carbon and job leakage, all of this without offering loopholes to avoid making any contribution at all, or making the system so complicated that commitments are ultimately circumvented or simply not contributing to lowering carbon emissions.

Carbon Equalization Measures At the Border On Imports Can Be Modeled In Compliance With WTO Non-Discrimination Rules

WTO rules prohibit two types of discrimination on the ground that efficient trade and buying decisions should be based on price, quality and other market factors, not national origin: first, WTO rules prohibit discrimination of imports as compared to like domestic products (national treatment under GATT Article III); second, WTO rules prohibit discrimination of imports from one country as compared to like imports from another WTO Member (most-favored-nation under GATT Article I).

In essence, this means that if a U.S. “carbon equalization measure” at the border – be it a border duty, allowance requirement or performance standard²⁰ -- does not impose

²⁰ Performance or carbon-intensity standards on a product-specific basis may also trigger U.S. obligations under the WTO’s Agreement on Technical Barriers to Trade (TBT). Yet, like GATT rules, these TBT obligations center on non-discrimination and the goal that technical regulations or standards should not be more trade-restrictive than necessary to achieve a legitimate objective, in this case, combating climate change. Note in this respect that a carbon-intensity standard would not ban imports based on their national origin but on their carbon-footprint and that under a so-called “tradable performance standard”, all imports

a heavier burden on, for example, imported cement as opposed to U.S. cement, nor a heavier burden on, for example, Chinese cement as opposed to Indian or European cement, the “carbon equalization measures” will pass WTO muster.

What is more, even if some discrimination were found (with, for example, Chinese cement having to buy import allowances, but not European cement), or any other WTO rule were found to be violated (such as the U.S. obligation not to impose import duties above a certain ceiling), the WTO explicitly provides for environmental exceptions. These environmental exceptions permit some discrimination and other types of tariff or import restrictions for as long as they are “related to” the conservation of exhaustible natural resources (including clean air and the earth’s atmosphere) or are “necessary” to protect “human, animal or plant life or health”.

Exporting countries are likely to argue that the United States ought not to interfere with their sovereign decision of how, for example, China wants to protect its environment or to regulate production processes and carbon emissions on Chinese territory. Yet, since carbon emissions do not respect state borders and carbon emitted in China can affect the U.S. environment as much as carbon emitted in the United States, this territorial argument based on sovereignty and the principle of non-intervention is not likely to carry much weight. Climate change is a global problem that affects all countries. Solving this problem cannot be done by one country limiting simply its own emissions. If other countries do not want to cooperate by means of an international agreement to cut emissions (Option 1 above), and the risk of climate change is real, countries who do want to fight it have a right under WTO rules to also condition imports based on their carbon footprint and to do so on a unilateral basis, without the agreement of exporting countries. The WTO Appellate Body, the highest judicial organ of the WTO, said as much in the *US – Shrimp/Turtle* dispute (where the WTO eventually accepted a unilateral U.S. ban on shrimp imports on the ground that foreign shrimp were caught in, for example, India or

would be allowed (those not meeting the standard could simply buy additional credits or allowances to make up for the deficit).

Malaysia, in ways that do not protect endangered sea turtle at the same level as prescribed for U.S. fisherman):

It appears to us ... that conditioning access to a Member's domestic market on whether exporting Members comply with, or adopt, a policy or policies unilaterally prescribed by the importing Member may, to some degree, be a common aspect of measures falling within the scope of one or another of the [GATT] exceptions ... [these exceptions] comprise measures that are recognized as *exceptions to substantive obligations* established in the GATT 1994, because the domestic policies embodied in such measures have been recognized as important and legitimate in character.

That said, to meet the GATT environmental exception, U.S. carbon equalization measures cannot be applied in a manner that would constitute “arbitrary or unjustifiable discrimination between countries where the same conditions prevail”, nor constitute a “disguised restriction on international trade”. This language does, however, allow the United States to make distinctions between imports from different countries (say, Burkina Faso as opposed to China or Europe as opposed to India) for as long as “different conditions” prevail in those countries. Most climate change bills before the 110th Congress, for example, stipulated that imports from least-developed countries would be excused as would imports from countries that take “comparable action” as compared to U.S. action to limit emissions. Since these countries are not in the “same situation”, i.e., different “conditions prevail”, differentiating between their imports would be acceptable for as long as the differential treatment is based on objective factors related to these countries’ “situation”, and not to the national origin of the products concerned.

To comply with the above guidelines of non-discrimination and/or the WTO’s environmental exception, the devil will be in the details. Here are some elements that will play a role:

- Efforts must be made to ensure that imports pay the same price per ton of carbon as domestic, U.S. produced goods. Where allowances are openly traded, and a separate pool exists for import allowances, a system must be developed so that the price of import allowances carefully tracks the price of domestic allowances.
- Besides pricing allowances in a non-discriminatory way, the calculation of the number of allowances to be submitted for each imported product must also be objective and non-discriminatory. For example, where U.S. products benefited from free allowances so must imported products. In addition, WTO rules prefer a carbon assessment on a product-specific basis by, for example, allowing an importer to demonstrate the actual carbon-footprint of a specific batch of imports. In the absence of such product-specific information, the United States could use an industry-wide historical baseline for each country, compare that baseline to most recent emissions, and divide the excess by the number of units produced in the country in question. The disadvantage of such industry-wide calculation, as compared to a product-specific calculation, is that it may not offer an incentive to, for example, an individual Chinese steel producer to cut emissions since the number of allowances he will have to buy at the U.S. border will anyhow be determined by overall emissions in the Chinese steel sector as a whole. The advantage of an industry-wide calculation, on the other hand, is that it does put more pressure on the Chinese government to enact regulations that mandate emission cuts on an industry or even country-wide basis since only if overall emissions go down (or China takes climate change action “comparable” to that of the United States) will Chinese exports have to pay for less, or no, emission allowances.
- To underscore the environmental objectives of carbon equalization measures at the border, and to avoid discrimination between products or countries, it is crucial that any differential treatment between products (say, computers and cement; raw materials and finished products) or between countries (say,

countries with high, low and no climate change action in place, or different levels of development or carbon emissions) are objectively justified with reference to environmental criteria including the risk of carbon leakage. Arguments or indications of economic competitiveness concerns or leveling of the economic playing field between, say, U.S. and Chinese steel, will not carry much weight in the WTO; on the contrary, they would most likely be used in support of a finding that U.S. legislation is protectionist or discriminatory and, therefore, violates the WTO treaty.

- Another consideration when deciding on whether carbon equalization measures on imports are protectionist of U.S. industries (generally not permitted under the WTO) or protectionist of the global environment (generally permitted under the WTO) is what the U.S. authorities would do with the moneys collected when selling or auctioning carbon allowances for imports. If this money goes into environmental projects, preferably global ones, and importers are, moreover, able to present foreign, equivalent allowances or credits (receipts for which would not even go to the U.S. treasury), this would be evidence of a genuine environmental objective. If, in contrast, the receipts would be refunded to specific U.S. import-competing industries (to be distinguished from refunds to U.S. taxpayers in general), this could present evidence of a protectionist or discriminatory design.

In sum, if carefully calibrated along the lines suggested above, carbon equalization measures at the border, imposed on certain imports, can be modeled in compliance with WTO non-discrimination rules and/or the WTO's environmental exception. It must be clear, however, that such climate change measures on imports can be levied only to impose a carbon cost on imports equivalent to the carbon cost imposed on like domestic products. Such measures cannot be used or abused as a tool to bring overall import prices up to the level of U.S. prices. To the extent imports of, for example, steel or cement from China are undercutting U.S. producers for reasons unrelated to U.S. carbon costs, carbon equalization measures cannot remedy that situation. To do so, the

WTO does provide, however, for other tools, namely anti-dumping duties to offset the price-undercutting effect of dumped imports, countervailing duties to offset the injury caused to U.S. industries by foreign subsidies, or safeguard measures to limit all imports because of a sudden surge in imports that causes serious injury to U.S. industries.

To illustrate this point with an example, if the price of U.S. cement is \$10 and because of U.S. climate change legislation it rises to \$14, and the price of Chinese cement (not subject to emission cuts) is \$8, then carbon equalization, assuming both emit the same amount of carbon, implies, at a maximum, an extra charge on Chinese cement of \$4 so as to offset the carbon cost on U.S. producers, not an extra charge of \$6 so as to equalize overall prices.

Finally, additional charges or allowance requirements on imports do have three drawbacks that free allowances for U.S. industries may not have. First, additional costs on, for example, imported steel from China or Korea will make producing cars in the United States more expensive. Trade barriers on energy-intensive inputs make production in the United States more expensive. Second, measures restricting imports based on their carbon-footprint may be seen by some countries as an incentive to ratify a post-Kyoto deal and to cut their emissions at source. Yet, other countries may see it in less benign terms and interpret it as something that will make international agreement more difficult. The latter may not only provoke blockage in climate change negotiations and WTO complaints. It may also trigger similar import restrictions in other countries, including on U.S. exports into countries that do not regard U.S. action against climate change as “comparable” to theirs. That said, the risk of an escalating trade war should not be overstated. If, for example, China wants to retaliate against U.S. import restrictions on the ground that those restrictions violate WTO rules, China must first file and win a WTO complaint and subsequently receive WTO authorization to retaliate.²¹ Whenever a country were to retaliate against the United States on the ground of an alleged U.S. violation of WTO rules without such WTO authorization, the United States can challenge such retaliation as inconsistent with the WTO treaty.

²¹ Article 23 of the WTO Dispute Settlement Understanding.

A third drawback of carbon equalization measures on imports, as opposed to lowering carbon costs on U.S. energy-intensive industries, is that such border measures rely on accurately detecting and influencing activity abroad, outside the jurisdictional control of U.S. authorities, and depend on information provided by foreign countries and foreign producers. Accurately gauging carbon emissions within the United States is difficult enough; calculating the carbon-footprint of foreign operations is even more difficult (albeit not impossible, witness standard U.S. anti-dumping investigations where U.S. authorities similarly rely on information provided by foreign entities). In addition, where U.S. legislation imposes an allowance requirement on some primary products (such as steel) but not on downstream products (such as cars), the extra duty could be avoided by relocating car plants away from the United States, a move that would only exacerbate job leakage.²² Finally, where U.S. border measures make fine-line distinctions between the number of allowances to be bought by imports depending on their national origin (say, Chinese cement must buy 10 allowances per ton; cement from Korea only 8), producers may find ways to circumvent the higher burden and get their product into the United States not as “made in China” but as “made in Korea”. This would neither protect the environment nor protect American jobs.

In closing one possible advantage of import equalization measures over carve-outs or free allowances for certain U.S. industries must be pointed out. Pricing carbon as it is emitted both by, for example, U.S. steel producers and imports of steel from China, does put a cost on carbon even in respect of energy-intensive products. In contrast, carving-out certain U.S. industries or giving them free allowances lowers the cost of carbon for those industries and does not impose any cost on imports. If effective, overall emission cuts under an import equalization scheme could, therefore, be expected to be greater than under a system of free allowances for certain U.S. industries (unless, of course, the absence of cuts in U.S. energy-intensive industries is more than made up with bigger cuts elsewhere). In this respect, a carbon intensity standard that all suppliers,

²² Note that this risk is, however, not present when it comes to imports of cement: Downstream products using cement – such as buildings -- are not normally traded.

domestic and foreign, must meet (with flexibility to buy/receive allowances for the difference from the standard) might be an attractive alternative.

Even If the United States Were To Violate WTO Rules, The WTO Dispute Settlement System Offers Broad Flexibility

From the analysis above, it should be clear that even if I am convinced that a WTO consistent way of addressing climate change and carbon and job leakage can be designed, WTO law and jurisprudence is still in its infancy and no one can tell with full certainty that something will, indeed, pass WTO muster. Especially if the United States were to impose carbon equalization measures at the border, on imports, a WTO challenge would be very likely. The United States would have very good arguments to defend such measures. Yet, even if the measures were not well designed or otherwise found to be inconsistent with WTO rules, the legal consequences are rather limited.

First, a WTO proceeding is likely to take two years, if not more, and even if the United States were to lose, it would not have to pay any compensation for past harm. WTO remedies are purely prospective.²³ Second, the United States would get a second chance to amend the details of its legislation to avoid, for example, discrimination. It would be given a “reasonable period of time” to do so, and would not have to pay or compensate for anything during this interval.²⁴ Third, even if carve-outs or free allowances for energy-intensive U.S. industries were found to violate WTO subsidy rules, the United States would not be obliged to “withdraw” those subsidies, but only to stop or “remove” their “adverse effects”.²⁵ Fourth, whatever WTO violation could be found, the United States can, in practice, decide to maintain its legislation and instead pay trade compensation or accept similar trade restrictions imposed by other, complaining WTO members.²⁶ In the long-standing *Hormone-treated beef* dispute, for example, the WTO repeatedly condemned the E.C. for unjustifiably banning hormone-treated U.S. beef.

²³ Article 19 of the WTO Dispute Settlement Understanding.

²⁴ Article 21.3 of the WTO Dispute Settlement Understanding.

²⁵ Article 7.8 of the Subsidies Agreement.

²⁶ Article 22 of the WTO Dispute Settlement Understanding.

Yet, the E.C. got away with this “illegal” ban, first, by suffering U.S. retaliatory import restrictions for years, and second, by offering the United States more market access elsewhere in a move that recently ended the dispute (the United States now has a bigger quota to export hormone-free beef into the EC). The United States did something similar after a WTO condemnation of a U.S. ban on online gambling services from Antigua: Instead of lifting the U.S. ban on online gambling, the United States negotiated to keep the ban in place in return for opening its market elsewhere. This is not to say that violating the WTO is costless (there are important reputational costs) or that compensation packages come for free. Only to point out that the WTO does not have the power to force its members to effectively change their legislation. In this sense, the WTO is, especially for large countries like the United States, a welcome check or control mechanism at the edges (to avoid, for example, harmful discrimination or protectionism) without, however, fundamentally affecting U.S. scope of legislative manoeuvring especially when it comes to such a fundamental interest as fighting climate change.

Conclusion

WTO consistent ways are available to fight climate change and to address both carbon and job leakage. If the WTO, in the famous *US – Shrimp/Turtle* dispute, gave the go ahead for the United States to “equalize”, in respect of imports, regulations on U.S. shrimp fishing aimed at protecting endangered sea turtle, then surely there must be a WTO-consistent way for the United States to “equalize” the cost of carbon imposed on U.S. energy-intensive industries aimed at saving the planet. That is not to say that these “carbon equalization measures” are easy to design and effectively implement. There is no doubt that reaching an international agreement where all major carbon emitters agree to cut their emissions would be the first-best solution. In addition, or as an alternative, U.S. climate change legislation could impose a lower carbon cost on certain U.S. energy-intensive industries (through, for example, free allowances). As a measure of last resort, U.S. climate change legislation could also impose carbon requirements on certain imports. This should only be a measure of last resort given the additional problems of higher input costs, detecting and influencing activity abroad and possible negative

reactions from other countries. Ideally, the threat of such import measures should suffice to guide reluctant countries into a post-Kyoto agreement and back to the first-best solution. If that fails, import measures, as difficult as they may be to design and implement in practical terms, must not be excluded, certainly not on WTO legal grounds, both to protect the environment and to protect American jobs.